Development the Influence of Leadership Commitment and Performance of Principals and Teachers on the Model of Improving Quality of Education

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Abstract

Education is the main foundation in the development of quality human beings and society. Judging from the facts on the ground, there are many problems in the field of education. One of the problems of education is the low quality of education at various levels of education, both formal and informal. This study aims to find and analyze the direct influence of teacher commitment on the quality of education and find and analyze the direct influence of teacher performance on the quality of education. This study uses field research with a quantitative approach. The preparation of research instruments begins with a theoretical study of various concepts, theories and opinions of experts. In this study, to test the validity given to the respondents, it was first tested on students outside the sample of 10 people each. To obtain complete, valid and reliable data, the researcher uses three methods, namely the Observation Method, the Questionnaire/Questionnaire Method and the Documentation Method. The results of this study are Based on the results of research and calculations proving that there is an influence between the principal's leadership variables on teacher performance at SMP IT Insan Madani, seen from the test of the persial test (T-Test), the results of the Tcount value of 3.232 and the Ttable value of 2.042 with a significance value of 0.003. With the test criteria of Tcount > Ttable and if the Significance < 0.05 then H0 is rejected. Thus, it can be concluded that the principal's leadership plays an important role in improving teacher performance, which ultimately impacts the quality of education. The novelty of this research lies in the empirical examination that demonstrates the direct influence of the school principal's leadership on teacher performance, specifically in the context of an integrated Islamic school (SMP IT). This study also offers new insights into understanding the dynamics of leadership within educational institutions that combine religious values with formal education, a topic that has not been widely explored in previous research.

Keywords: influence of leadership; influence of commitment; influence of performance; quality of education

INTRODUCTION

In the long journey of human civilization, education has become the central pillar that leads to the progress and development of society (Jaya et al., 2023). Education is the most crucial asset for a country to produce superior and quality human resources (Zohriah et al., 2023). Education has become a driving force in the evolution of human civilization, playing a role as a pillar that supports social progress and development. That is the greatest asset for the Indonesian state in producing superior human resources, which are essential for national growth and progress.

Although education has become the central pillar of human civilization and the most significant asset for the Indonesian state, the reality on the ground often needs to be in line with these ideals. As expressed by N. M. Dwijayani, education in Indonesia often needs help in the classroom learning process, which tends to be theoretical and less applicable (Maritsa et al., 2021). To overcome these challenges, the presence of educators and educational technology can play an essential role in developing students' potential and creativity and providing a more enjoyable and insightful learning experience.

In the context of education, a teacher needs to employ a learning method that is suitable for the students. The educator applies a method that can involve all elements in students so that each potential and ability develops according to their own learning style (Hasriadi, 2022). In other words, the importance of the teacher's role lies not only in the knowledge they convey but also in the learning methods they apply. A practical method involves all elements of the student, allowing the development of their potential and abilities individually according to their respective learning styles.

Meanwhile, educational technology plays a role as a tool in the learning process. According to Yuberti, educational technology is a study and practice that helps the learning process and prioritizes how the experience process can be obtained by each student (Syafriafdi, 2020) with a focus on personalizing the learning experience for each child so that each student can have an optimal experience that is relevant to their needs. The role of technology in education also reflects broader global changes. With technological disruptions, such as automation, artificial intelligence, and big data analytics, education in Indonesia must adapt to prepare students with relevant skills for the future.

Education is now required to prepare students to face these changes. The need for skills has also shifted from relying on the physical to focusing more on problem-solving, cognitive, and social skills. In this context, History education is often considered a tedious and less exciting subject. Enhancing their knowledge of History can help teachers overcome many challenges.

The statement by S. Hamid Hasan highlights the significant role of history education in shaping the character of the nation's younger generation. By fostering historical awareness through formal education, students can develop a sense of nationalism (Asmara, 2019). History learning is an essential instrument in formal education to shape the nation's character and nationalism of the younger generation. The younger generation can develop historical awareness and love for their nation through understanding and appreciating History.

The study of History indeed requires both imagination and logic. Imagination allows students to visualize and empathize with the people, places, and events of the past. History teaches national values that can be exemplified in the present to maintain the nation's identity. In the independent curriculum, Indonesian History and History of Specialization are transferred to "History" subjects and included in the general map with reduced lesson hours. However, the government provides solutions with additional teaching, such as being the coordinator of the Pancasila Student Profile strengthening project. History learning in the independent curriculum covers History until the reform period in Indonesia and is supported by learning tools in modules.

Innovation in history learning can be achieved by developing integrated and comprehensive concepts and paying attention to the planning, strategy, and evaluation stages. Employing various learning strategies and techniques can significantly enhance students' enthusiasm for learning. Learning media plays a crucial role in enhancing students' motivation. It provides a visual, auditory, or interactive experience that can make learning more engaging and

enjoyable. History teachers are essential in developing education that focuses on students' progress. They must control and develop the learning process according to the student's preferences and desires. Diversifying learning approaches is crucial in providing student learning support. The end of the 20th century marked the emergence of fresh ideas about education, including history education, which demanded innovation and adaptation in the learning process.

According to Ki Kajar Dewantara, each individual is unique and has a different way of learning. That requires education to see the nature of the child and connect it with the nature of the times (Hunaepy et al, 2023). To meet this diversity, differentiated learning approaches are a solution that teachers should understand. Differentiated learning is a process or philosophy for effective teaching that provides a variety of ways to understand new information for all learners in a diverse classroom community.

Traditional history education often emphasizes the mastery of facts and details, such as dates, names, and places, which leads students to see History as a collection of separate, stand-alone parts. This paradigm, heavily influenced by the way of thinking of Descartes and Newton, has begun to change since the late 1980s. Recent scientific discoveries show that the true meaning comes from the relationship between the parts, i.e., the context. For example, understanding the relationship between ethnic groups in Indonesia that support the life of the Indonesian nation has a meaning that goes beyond simply understanding the number of ethnic groups in Indonesia. In other words, understanding the context is much more meaningful than learning many things separately without relevance.

Teachers use the contextual learning approach, or Contextual Teaching and Learning (CTL), to relate their teaching material to real-world situations. This concept encourages learners to connect the subject matter to the context of their own lives in their community's social and cultural environment, helping them understand its meaning. Thus, the learning process affects learning outcomes and provides meaningful knowledge and experience in the real-world context of students. Components of CTL include engaging in meaningful activities, self-directed learning, collaboration, critical and creative thinking, helping individuals to grow and develop, achieving high academic standards, and using authentic assessment. The experience of learning history will strengthen students' memory of their nation's History and help them appreciate human and historical values (Annisa & Fatmahanik, 2023).

The contextual approach to learning has advantages and disadvantages. The advantages include placing students as active learning subjects, learning related to the real world, and knowledge that develops based on experience. In addition, this approach enables learners to study on the go, and educators can conduct assessments in various ways. However, this approach also has its drawbacks. Learning can become more varied if teachers cannot relate the material to students' real lives. Additionally, learners may need help conducting inquiries and building their knowledge if teachers provide extra guidance and attention. However, the contextual approach remains an effective method because it relates the teaching material to the real-world situation of students and encourages them to connect their knowledge and its application in real life. The components of this approach include constructivist processes, systematic thinking, cooperation, and reflection, all of which contribute to the achievement of learning outcomes.

Senior high school or SMAN 86 Jakarta is one of the schools that has implemented this approach in their curriculum. Despite challenges, such as teachers not mastering conventional technology and teaching methods, the school strives to make learning more varied and enjoyable. Based on the survey, students at SMA 86 feel that they understand History learning better if the teachers who teach use a contextual approach and feel more related to their daily lives. In addition, the school strives to develop teaching modules that align with the needs of students, especially considering that many students in SMA 86 have a visual/audio-visual learning style.

Teachers at SMAN 86 Jakarta have designed teaching materials that are more practical, easy to carry around, student-oriented, and can be used for independent learning through the internet. Moodle is one of the platforms that educators can use to create digital-based teaching materials, transforming learning media into a web format. Moodle is an open-source LMS that everyone can modify according to the institution's needs. Thus, SMAN 86 Jakarta has strived to meet the learning needs of students innovatively and effectively. Using technology-based learning

media makes students feel more interested because it is in accordance with their times.

This research focuses on developing History learning e-modules to support differentiated learning. Based on the background of the problem, this study aims to produce a history e-module that supports differentiated learning, analyze the feasibility of electronic modules developed for use in history subjects, and analyze the effectiveness of Moodle-based electronic modules developed for use in history subjects. This research theoretically benefits studies and can later serve as a reference for developing electronic module teaching materials. The practical benefits include helping students improve History learning, helping teachers provide materials effectively, and providing an overview for schools to develop digital-based teaching materials with the Moodle application.

E-learning, which utilizes Internet technology, has become an effective and efficient learning method. In e-learning, teachers not only upload learning materials but also evaluate, communicate, collaborate, and manage other aspects of learning. Moodle, one of the most popular open-source learning management systems (LMS), allows internet-based learning and websites. Moodle facilitates learning in the "Digital Classroom," where students can access learning materials, quizzes, electronic journals, and more. Moodle, which stands for Modular Object-Oriented Dynamic Learning Environment, offers a dynamic and object-oriented learning environment. With *Moodle*, learners acquire a personal identity and password, allowing educators to monitor their activities objectively. Moodle offers advantages such as ease of use, affordable cost, and the capability to create engaging learning materials or modules. These features enhance the learning experience and effectively help achieve learning goals.

This research refers to several previous scientific studies that are relevant to the development of electronic modules. Some of these studies include research conducted by Ismi Rahayu and Sukardi, which is conducting R&D research to develop project-based electronic module learning media intended for Basic Computer and Network students in Vocational High Schools. This research succeeded in creating a learning module that significantly improves student learning outcomes by developing a 4-D Model (Rahayu & Sukardi, 2021). In addition, Akmal Rijal and Andriana Sofiarini conducted research with the Plomp development model to create a valid, practical, and effective Moodle-based elementary school mathematics e-learning at PGSD STKIP PGRI Lubuklinggau. The results show that the e-learning developed meets the validity criteria with an average score of 95%, indicating high effectiveness in elementary mathematics learning (Rijal & Sofiarini, 2019).

In the context of "*State of the Art*," this study compares with previous studies. Based on the information obtained from the study results, there has yet to be anyone to develop digital learning materials using *the Moodle* application with a contextual approach and R&D research procedures. Therefore, this study offers novelty in developing history e-modules with a contextual approach using *the Moodle* application. That reflects the desire to conduct development research based on the background of the problem presented before.

METHODS

This study employs the Research and Development (R&D) method designed to produce and test the effectiveness of a specific product. The product developed in this context is an e-module based on a contextual approach. This method follows procedural steps suitable for R&D, considered appropriate for achieving development goals. The research was conducted at SMAN 86 Jakarta, which has implemented the Merdeka Curriculum. The researchers involved two teachers with different teaching methods to test the e-module being developed. The focus of this study is to develop an electronic module as a learning resource to facilitate students in the history learning process. The final product is an e-module containing history learning materials for Phase F in high school, related to the period of European Colonialism and Imperialism in the archipelago. This module presents information in various formats, including text, graphics, audio, video, and practice questions.

The Hannafin and Peck learning model was chosen for this study due to its product

orientation and ease of development. This model consists of three phases: needs analysis, design, and development, followed by implementation. Each phase is accompanied by an evaluation and iteration process to ensure the quality of the product produced.

This study follows an R&D research design, with product development stages including needs analysis, design, development, implementation, and formative evaluation both qualitatively and quantitatively. The participants involved in this study were two history teachers from SMAN 86 Jakarta, each employing different teaching methods. These participants were selected to test the developed e-module and provide feedback on the product.

The research methods used include qualitative analysis in the needs analysis phase, as well as product design, development, and testing in a classroom environment. Formative evaluation was conducted in the second phase using qualitative and quantitative methods to assess the effectiveness and quality of the e-module produced.

Validity of Research Data. The validity of the research data is ensured through data triangulation, using various information sources, such as interviews with teachers, direct classroom observation, and document analysis. Additionally, repeated formative evaluations at each phase of module development ensure the validity of the research results.

The data were analyzed using a qualitative approach to identify the needs of students and teachers in history learning. During the formative evaluation stage, quantitative data were analyzed to measure the effectiveness of the module based on trial results and feedback obtained from teachers and students.

RESULTS AND DISCUSSION

This research and development focus on creating Moodle-based learning media to support differentiated learning at SMAN 86 Jakarta, with the primary material of European colonialism and imperialism in the archipelago. The main objective is to determine the feasibility of this interactive e-module in the independent curriculum phase F. Material and media experts have validated the developed teaching module, and teachers and students have tested it. They have declared it suitable for use. The development process of this e-module follows the Hannafin and Peck method, which includes three main phases: Needs Analysis, Design, and Development and Implementation. Evaluations and revisions occur at each phase to ensure the module's effectiveness and suitability with learning needs. Thus, this research contributes significantly to developing practical and relevant learning media.

Phase I of this study, namely Needs Assessment or Needs Analysis, involves collecting information to understand the needs of History learning in phase F or grade XI. This stage involves observation, interviews with history teachers, and distributing questionnaires to students. Observations were made at SMAN 86 and SMA Triguna to understand the History of the learning process and the students' characteristics. Observations reveal that many students believe they need accommodation in their learning methods.

The teacher under discussion expressed difficulties implementing the independent curriculum, a program recently introduced in all Indonesian schools. Many students find it challenging to learn History, lack focus, and tend to be fun on their own. Teachers' teaching methods are less varied, and using learning resources limited to printed modules and PPTs makes students less interested and bored. Interviews reveal that a large amount of material and difficult words could improve students' understanding and knowledge of history subjects. Large numbers of inactive students, limited lesson time, and the volume of material to cover pose teaching challenges for teachers. This difficulty makes students less than optimal in following the learning process.

A questionnaire distributed to 34 students at SMAN 86 Jakarta reveals various essential aspects to consider in developing learning media. Regarding interest and motivation, 55% of students showed low interest in traditionally presented material. That shows the importance of innovation in the presentation of learning materials. Furthermore, 50% of students have difficulty understanding abstract concepts in History, indicating the need for a learning approach to facilitate understanding concepts.

Regarding interactive learning, 80% of students prefer materials with videos, interactive quizzes, and simulations. This shows that interactive and exciting learning media can increase students' interest and motivation. Meanwhile, 70% of learners feel their learning resources are limited and less motivating, indicating a need for more diverse and exciting learning resources. Finally, regarding learning differentiation, 65% of students with different understandings require materials they can access at their learning speeds. That shows the importance of adaptability in learning media to support the diversity of students' learning styles.

In the context and learning environment, SMAN 86 Jakarta has adequate facilities and technology infrastructure to support the implementation of e-modules in the learning process. In addition, based on the survey results, 85% of students have access to a computer or smartphone and an internet connection at home. Therefore, most students can access e-modules both at school and at home. In addition to the technical aspects, this analysis includes aspects of the social environment and learning culture. In this context, the e-modules developed must support the goals of the Independent Curriculum by providing learning activities that encourage students to think critically and work on projects relevant to historical materials. Therefore, learners can use Moodle-supported e-modules to make their learning process more interactive, enjoyable, and independent. They can access these modules anytime and anywhere, improving learning quality.

The second phase of this research, design, involves the creation of modules with the material of colonialism and imperialism in the archipelago. This design is made in the form of storyboards and prototypes, which include all the components needed in the interactive e-module to be systematic and feasible to use in the learning process.

The storyboard e-module in Table 1. includes various elements, such as the home page containing a welcome greeting and instructions for using the application, a table of contents containing the structure and content of the modules, an introduction page containing CP, ATP and TP learning and motivation or perception in the form of videos, images, and narratives, a learning page containing a list of material topics and a description of the material supported by images and learning videos integrated with YouTube, The closing page contains a summary of the learning material, the evaluation page contains evaluation questions in the form of Multiple choice, multiple response, completion and matching, and the reference page contains a bibliography used in the electronic learning module.

Table 1. Storyboard A-Modul

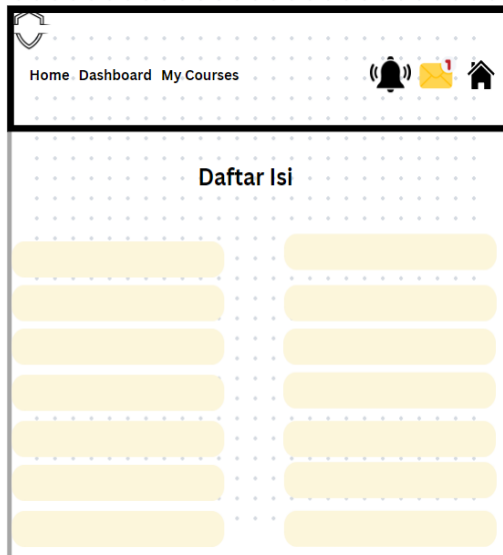| No	Display	Information
1		The initial display of the E-Module contains a welcome greeting. Instructions: A menu that contains instructions for using the app. Moreover, a house image button is needed for the material selection. And on the front display, there is a feature to log in

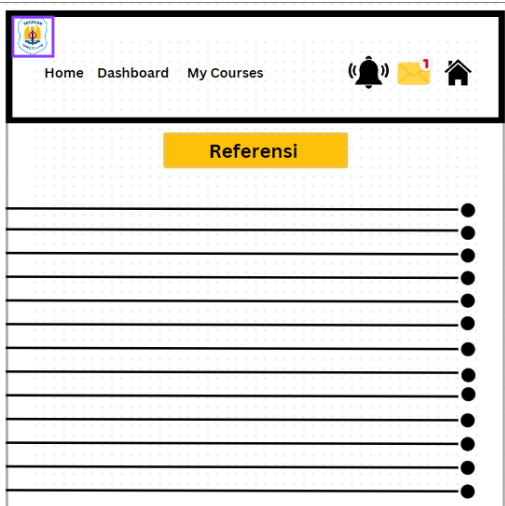| 2	**Daftar Isi**	Table of contents: Loading the structure and content of the e-learning module. Displaying the table of contents is done by pressing the part of the material you want to select on each page. Students can also watch videos, see pictures, or read the material in the E-Module.
3	**Pendahuluan** CP (Capaian Pembelajaran) Tujuan Pembelajaran Motivasi dan Apersepsi	Introduction The introduction page contains CP, ATP, and TP learning and motivation or perception in videos, pictures, and narratives.
4	**Pembelajaran** 1 Penjelajahan samudra bangsa Eropa 2 Kedatangan Bangsa Eropa ke Nusantara 3 Perluasan kolonialisme dan Imprealisme	Learning: The learning page contains a list of material topics taught and a description of the material supported by images and learning videos integrated with YouTube. At the end of the lesson, students are free to choose features to discuss the learning that has been provided.

5		Cover: The closing page contains a summary of the learning material, and at the end of the page, it is embedded with a feature to discuss learning.
6		Evaluation The evaluation page contains questions *on multiple choice, multiple response, completion, and matching*, which can later show the extent of students' abilities.
7		Reference The reference page contains a bibliography of the e-learning modules used in the

Students are more interested in using this E-Module because of its attractive cover and components, such as concept maps, table of contents, glossary, user targets, descriptions, and interactive teaching material instructions. This E-Module is then integrated into the LMS (Moodle) to assist students and teachers at SMAN 86 support differentiated learning. Following the Hannafin and Peck model steps, evaluating and revising the design is necessary. The aim is to obtain feedback on the feasibility of the design of these e-modules to be developed and implemented, as well as whether they are following the expected quality standards. At this stage,

material and media experts conduct the first test. Professionals then fill out the provided assessment sheets to evaluate the revised learning modules.

The results of the validation of the subject matter experts in Table 2. showed that Moodle-based e-modules were "worth developing with revisions," with an overall percentage of 86%. Some of the notes, criticisms, and recommendations from the validators about the material include the need to provide direct reference references within the material page, the addition of captions to images and videos, an increase in the number of assessment questions, and updates and additions of references.

Table 2. Material Expert Validation

No.	Aspects	Average score	Percentage (%)	Eligibility Category
1	Material Compatibility with CP	4,33	86	Proper
2	Material Accuracy	4,4	83	Proper
3	Updating Materials	4,27	85	Proper
4	Encourage Curiosity	4,33	90	Highly Worthy
5	Serving Technique	4,44	80	Proper
6	Serving Supporters	4,75	95	Highly Worthy
7	Presentation of Learning	4,38	83	Proper
8	Breakdown of the flow of thought	4,33	85	Proper
Average Overall Aspect		**4,40**	**86**	**Proper**

Media experts are the target of the second assessment, which shows an overall average score of 84 %, according to the results in Table 3. Based on the percentage criterion, the design of Moodle-based e-modules is "worth developing with revisions." Some notes and suggestions from the validators for the improvement of the electronic learning module, including suggested material texts, appear gradually with sound to strengthen the audio-visual memory of learners, write the identity of the tutor, improve the quality of images or videos, optimize the layout and graphics, and add quizzes and interactive exercises. The suggestions aim to make the module more effective and attractive for students. Thus, this stage of evaluation and revision provides essential feedback for the improvement of the quality of the e-module.
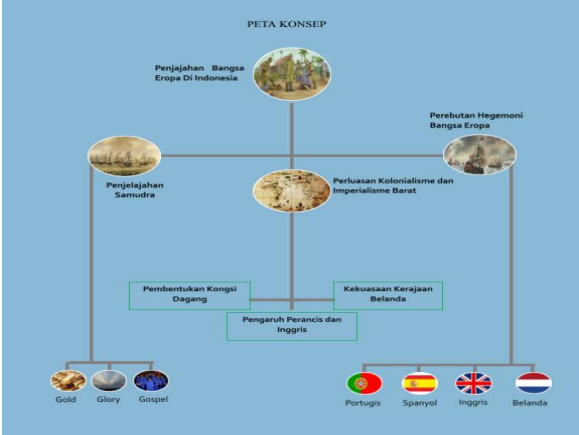
Table 3. Media Expert Validation

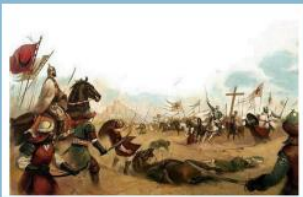| No.	Aspects	Average score	Percentage (%)	Eligibility Category
1	Letter Composition	4,4	81	**Proper**
2	Image Composition	4,18	83	**Proper**
3	Color Composition	4,11	82	**Proper**
4	Layout Design	4,54	89	**Proper**
5	Ease of Operation	4,16	83	**Proper**
6	Accessibility and Enrichment	4,16	83	**Proper**
7	Straightforward Language	4,16	83	**Proper**
8	Communicative Language	4,16	83	**Proper**
9	Dialogical and Interactive Language	4,25	85	**Proper**
10	Language Fluctuation	4,14	81	**Proper**
Average Overall Aspect		**4,23**	**84**	**Proper**

The development phase is the next stage after learning design and is the final phase in Hannafin and Peck's development model. At this stage, we transform the design into a genuine

product that students can test and use. This development is carried out carefully and integrates various learning elements well so that the resulting e-modules are informative but also exciting and effective in supporting differentiated History learning per the Independent Curriculum.

This development is also based on criticism, suggestions, and expert input at the design stage, as shown in Table 4. The e-modules developed include various elements, such as e-module covers, concept maps, motivation and perception with pictures to attract students' attention, learning pages equipped with images and sources/references that can be directly accessed, and assessments/competency tests with various questions. With the development of this e-module, differentiated learning at SMAN 86 can run better and make students more interested and understand the material of colonialism and imperialism.

Table 4. E-module development

No	Picture	Information
1		Cover E-modul
2		Concept Map
3		Motivation and Apperception with pictures to attract students' attention

| 4 | Gambar Peta kekuasaan kekaisaran Romawi
Sumber:
https://www.sejarah-negara.com/68875/peta-jalur-perdagangan-kekaisaran-romawi-dan-parthia/)

b) Perang Salib (Perang Suci)
Orang Kristen menyebutnya "Perang Salib", dan orang Muslim menyebutnya "Perang Suci". Ini adalah perang yang melibatkan masyarakat Eropa melawan Turki Seljuk dan orang Arab. Perang tersebut berlangsung selama dua abad dan terbagi menjadi tujuh periode. Perebutan kota Yerusalem memicu perang. Salahuddin Al-Ayyubi, pahlawan Islam yang terkenal, akhirnya dapat mengambil kembali kota ini dari raja Kristen yang telah berkuasa selama seratus tahun dalam perang Khitin. Raja Richard The Lion Heart dari Inggris meminta raja-raja Eropa untuk merebut kembali Yerusalem, tetapi mereka tidak berhasil.

Gambar Lukisan Perang Salib | The learning page is equipped with images and sue-modular/reference that can be accessed directly |
| 5 | 3. Bangsa yang dapat disebut sebagai kolonisator pertama adalah Bangsa … .
A. Eropa dan Portugis
B. Portugis dan spanyol
C. Belanda dan Inggris
D. Yunani dan Portugis
E. Spanyol dan Yunani

4. Sistem tanam paksa terjadi pada masa pemerintahan … .
A. Cornelis De Houtman
B. J.P. Coen
C. Deandels
D. Raffles
E. Van den Bosch

5. VOC atau *Vereenigde Oostindische Compagnie* adalah perusahaan dagang Belanda yang didirikan pada awal abad ke-17. Salah satu tujuan utama VOC adalah menguasai perdagangan rempah-rempah di wilayah Nusantara. Keberhasilan VOC dalam mencapai tujuannya tidak lepas dari strategi ekonomi dan militernya.
Bagaimana strategi VOC dalam menguasai perdagangan rempah-rempah di Nusantara pada abad ke-17 … .
A. VOC mendirikan pabrik rempah-rempah di seluruh Nusantara
B. VOC melakukan monopoli perdagangan rempah-rempah dengan cara menguasai pelabuhan-pelabuhan utama
C. VOC mengadakan perjanjian dagang yang adil dengan kerajaan-kerajaan lokal
D. VOC membentuk aliansi dengan kerajaan-kerajaan lokal untuk bersama-sama mengontrol perdagangan rempah-rempah
E. VOC memperkenalkan teknologi pertanian modern kepada masyarakat lokal yang meningkatkan produksi rempah-rempah | Assessment/competency test with a variety of questions. Multiple choice and complex multiple choice. |

We conducted the History Learning e-module trial with a small group of 15 students in class XI-C at SMAN 86 Jakarta to evaluate the module's effectiveness and quality before its widespread use. The methods used include observation, interviews, and questionnaires. Observations show that most students can use the e-module well, although some experience difficulties with specific features. Learners were highly interested in videos and animations, but some text material needed to be denser. Post-learning interviews provide in-depth feedback on the learner experience, multimedia quality, and improvement suggestions. Students feel that e-modules are very helpful in understanding the material and choosing between watching videos or reading texts. They suggest adding explanations to complex topics, improving image quality, adding interactive quizzes, and more precise explanations of usage instructions.

In addition to observations and interviews, the authors use questionnaires to obtain more valid data. This questionnaire covers four aspects: material, language, interest, and appearance. This questionnaire was disseminated to 15 students in classes XI-C at SMAN 86 Jakarta. The results of the students' responses are in Table 5. It shows an overall average score of 4.19 with a percentage of 85%, which means this e-module is worth using.

Table 5. Results of student responses

No.	Aspects	Average Score	Percentage (%)	Eligibility categories
1	Material	4,2	84	**Proper**
2	Language	4,23	85	**Proper**
3	Interest	4,2	84	**Proper**
4	Display	4,23	85	**Proper**
Average Overall Aspect		**4,19**	**85**	**Proper**

After the instrument is declared valid, a reliability test is carried out to ensure the consistency of the research instrument. The Cronbach's Alpha value resulting from the reliability test was 0.908, meaning all 15 statements were declared reliable or consistent. This shows that this research instrument is trustworthy and belongs to the very high-reliability correlation index category. Thus, this History learning e-module has gone through a rigorous testing process and is considered practical and feasible to use in the learning process.

The development of History learning e-modules at SMAN 86 is a strategic step that requires evaluation and revision in each phase to improve the quality of technology-based learning. This revision involves experts, teachers, and students to ensure that the e-modules are high quality and appropriate to the student's learning pace and style. Some of the aspects that were evaluated and improved included students' motivation to learn, where more explanatory videos were added; student activities, by adding additional exercises; clarity of the material, by adding additional explanations to some topics; and multimedia quality, by improving the quality of videos and images. Thus, this evaluation and revision process ensures that the e-modules developed can support effective and engaging learning for learners.

Evaluation and revision are essential components in developing History learning e-modules at SMAN 86, which aims to improve the quality of technology-based learning. This process involves input from experts, teachers, and students to ensure that the resulting e-modules can meet diverse learning needs. Based on Table 6. Several suggestions for improvement have been identified, such as adding explanatory videos to increase learning motivation, additional exercises to improve student activities, additional explanations on certain materials for clarity, and improved multimedia quality. This revision is expected to make students learn more effectively, according to their respective learning speeds and styles.

Table 6. Summary of Revision and Evaluation

No	Aspects to be evaluated	Suggestions/Improvements
1	Students' motivation to learn	Adding more explainer videos to motivate learners further
2	Student Activities	Students are already active, but it is better to add additional training for students
3	Material Clarity	Adding additional explanations to some topics
4	Multimedia quality	Enhance video and image quality

Implementing e-modules in class XI-C SMAN 86 Jakarta has been carried out for a whole month as an integral part of the differentiated learning process. During this period, summative assessments were carried out to evaluate the effectiveness of e-modules through tests and student satisfaction questionnaires. By comparing the results of pre-tests that have been carried out previously with post-tests, it can be seen that there is an improvement in student learning outcomes. This implementation is not only limited to testing effectiveness but also to the application of e-modules on a broader scale, namely to all students in grades XI-C, providing a more comprehensive picture of the impact of e-modules on the overall learning process.

The development of the history E-module at SMAN 86 Jakarta has undergone a series of structured processes, from preparing materials using Microsoft Word, which is then integrated into the Moodle platform. Materials collected from various sources, including books and the internet on colonialism and imperialism, are compiled with attractive designs but still focus on comfort and ease of reading. To support the comprehension of the material, images and videos are added, including YouTube videos that can be watched directly from the module. Learning evaluation is done through questions integrated into Moodle, allowing students to work on problems and get results instantly. A discussion forum is also embedded to facilitate interaction between students and educators. In addition, there is a link to BardAI, an AI chatbot from Google, which allows students to interact in real time. The final stage of this development is the publication of the e-module, which has been validated by experts and received feedback from learners, marking the completion of a comprehensive historical e-module development cycle.

The validation of the History e-module material at SMAN 86 Jakarta has shown that the material meets the eligibility criteria and is considered "feasible" to be used in learning. The validated aspects included the suitability of the material with the Learning Outcomes (CP), the accuracy of the information, the ability to encourage students' curiosity, presentation techniques, effective learning presentation, and coherence and logic of the thought flow. Even though the material has met the set standards, the validation results recommend revisions in several parts based on input from material experts. The suitability of the material with ATP also received a "feasible" assessment, confirming that the material presented was per CP and could support the achievement of competencies at the high school level. The self-contained nature of this module ensures that all the material required to learn one particular competency is fully available in one module, per the standards of the Directorate of Senior Secondary School Development in 2017.

In the development of e-modules for automated control systems, the accuracy aspect of the material has met the "feasible" category, signifying conformity with the basic theory as well as applicable concepts and definitions. Despite challenges in the accuracy of technical terms and symbols and the limitations of reference sources, this e-module has been equipped with various supporting media that make it easier for students to understand the material. Raden Roro Rastrani Rahada Putri et al. (2022) emphasized that electronic modules that integrate writing, images, sounds, and videos can be significant in helping students understand and apply the material (Raden Roro Rastrani Rahada Putri et al., 2022). Furthermore, aspects that encourage students' curiosity are rated as "very feasible," with the presentation of materials, examples, pictures, and exercises designed to spark curiosity and critical thinking. Apperception in the form of videos is introduced at the beginning of learning to prepare students mentally and focused, in line with the goals of Darmuki et al. (2018) that in the learning process, students need to build their understanding based on the knowledge they already have actively, creatively, and productively (Hidayati & Darmuki, 2023).

The e-modules developed at SMAN 86 Jakarta show a "very decent" level of up-to-date, with materials that align with fundamental theories, technological advancements, and the latest literature. Setiawan et al. (2020) emphasized the importance of *up-to-date* attractive visuals to motivate independent learning (Setiawan et al., 2020). The aspects of presentation techniques, material coherence, and presentation support were also assessed as "feasible" to "very feasible, " indicating the quality of electronic module components, including materials, images, videos, and learning activities. Subject matter expert validation suggests adding direct references to the material and the complementarity of image captions to avoid confusion, as well as the integration of hypertext and hypermedia navigation for easy access to reference sources. That aligns with the suggestion of Putra et al. (2016), who advocate for easy access to references to enrich students' understanding of the material (Elly S. & Mulyono, 2023).

Media validation on the developed e-module shows that the composition aspects of letters, images, and colors have met the "decent" category, with easy-to-read letters, relevant images, and harmonious colors, supporting visual aesthetics and material readability. Ease of operation, accessibility, and enrichment were also rated "decent," indicating that the visual layout and navigation of the module had been designed for users' convenience. The language used in the e-modules-straightforward, communicative, dialogical, and interactive—following the learners'

development also falls into the "feasible" category, ensuring that the material can be adequately understood per proper linguistic rules, as outlined by Hurrahman et al., (Hurrahman et al., 2022).

Students' responses to the history e-module implemented through Moodle showed high adaptability and accessibility, with 36 respondents successfully accessing using different brands and specifications of smartphones and internet platforms. That indicates that the e-module has been designed with the diversity of technologies used by learners in mind, in line with the findings of Nurohman and Suyoso (2014) on the affordability of web-based electronic modules through mobile devices (Marizal & Asri, 2022). User responses to the e-module include aspects of the material, language, interest, and appearance, all rated as "decent." The e-module material is considered easy to understand, with systematic presentation, straightforward sentences, and relevant examples, confirming that the e-module meets the quality of the content and learning objectives. The language used was adequate and followed the rules of the Indonesian language. At the same time, the exciting aspect showed that the e-module succeeded in increasing learning motivation and allowing learning tailored to each student's speed and learning interest. This success is also reflected in increased student assessment after using Moodle-based e-modules.

CONCLUSION

Based on the research and implementation results, the History learning e-module at SMAN 86 Jakarta has shown its effectiveness in increasing students' motivation and learning achievement. Interactive features such as videos, simulations, and exercises have aroused interest in learning, while the flexibility of technology allows for personalized learning that adapts to individual needs. The evaluation of the use of e-modules noted a significant improvement in material comprehension, showing that e-modules can overcome traditional learning barriers. Teachers should continue to integrate features that support learning personalization, while schools are advised to organize technology training for teachers. Subsequent researchers are expected to evaluate the long-term impact of e-modules in differentiated education, providing empirical evidence of their effectiveness in inclusive and adaptive education transformation.

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